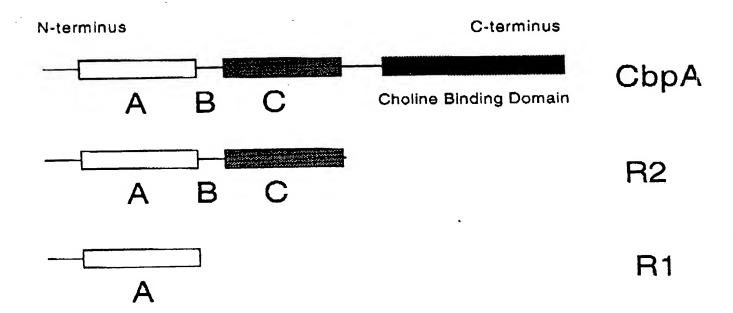
Inventor(s): Tuomanen

Application No: To Be Assigned Atty Dkt No: 044158/273011

1/8



Inventor(s): Tuomanen

Application No: To Be Assigned Atty Dkt No: 044158/273011

2/8

				100			
	AVASLVMGSVVHA	TAVOTTOVAT	SSNRANESQT	EHRKAAKQ	VI	EYIKKML	
=	-AVASLVINGSV VIIA	20	30	40	50	60	70
SPB328(23F) Cbp	10	۵U مرزر کوروز الاحت		EHMKAAKQ	VI	EAIKKKT	QL 33
SPB328(23F) Cbp. SPB365(23F) Cbp.	-AVASLIMGSVVHA	WEREALIGATION TO	CSNRANKSOT	EHMKAAKQ	VI	EAIKKKT-	
SPB365(23F) Cbp	-AVASLEMGSVVAA	TEKEVITOVA	rssnranesQA	GHRKAAEQF	]	DEATKIMT -	QL 53
SPB105(6B) CbpA SPSJ12(19A) CbpA SPB331(14) CbpA	THE STEWARD TO ALL	TEKEVITOVA	rssnkanksqt	EHMKAAKQ	V	DEATKKKT-	0t. 51
SPB331(14) CbpA SPB332(9V) CbpA	cmmastamesvall	TENERTIOUP	TSSNRGKF	ERRKAAEQF-		DEATMENT D	ETOI. 55
SPB331(14) CbpA SPR332(9V) CbpA ATCC2 CbpA trun	VAVAST VMGSVVHA	TEKEVTIQVP	TYSNMAK- <b></b> 1	EHRKAAKQV-	V	DE'T TEVITE	ETO1, 40
R6X(2) CbpA tru SPSJ9(14) CbpA ATCC6B Cbpa tru	V_TAST.FT.GGVVH	EGVRSE	NNPTVTSSGQI	DISKKYADE	V	ECAL VELL'R	TWIKNU 52
SPSJ9(14) CDPA	AST.FI.GGVVH	EGVRSG	NNSTVTSSGQI	DISKKYADE	V	ESULVOITU ESULVOITU	ESYAKS 70
ATCC6B Cbpa tru Ntype4 CbpA tru	CTVASLVMGSVVH	ATENEGATOVP	TSSNRANESQ!	FOGEOPKKTD	SERDKARKEV	EEAAKKIAG	FSYAKS 69
Ntype4 CbpA tru ATCC4 CbpA trun	-IVASLVMGSVVH	ATENEGATOVE	TSSNRANESQ?	<b>VEO</b> GEO LKKTD	SERUKARKEV		
AICC4 CDPA CLC.					E-1		
	ASSESS TO SECURITION			DELLES	_KT.DAAFEOE	KKDTL	
	DRRKHTONVALNT	KLSAIKTEYL	GLSVLEEKSE	ALLPSEINA	120	130	140
	80	90	100	110	120	130	
SPB328(23F) Cbp	80 DRRKHTQNVGLLT	KLGVIKTEYLI	IGLSVSKKKSE	AELPSEIKA	-KLDAAFEQI	KKDID	111
	T. I. IEN MOTHERS GOT.	KLCATKIEAT	10120211112	Minne Driver		TELEVISIO	113
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Ntype4 CbpA tru	n TKKRHTITVALVI	NETWNTKWEIT	WVTAB212				
		TEPGKKVAFAF 160					
		mencevine a	KKVEEAKKK-	AEDQK	EEDRRNYPT	TYKTLELE	LAESDVEV
		TEPGRAVALAL	170	180	190	200	210
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Ntype4 CbpA to ATCC4 CbpA to	un PEASDTAKPNK	RIEFGEVANDA					

## Figure 2A

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Application No: To Be Assigned Atty Dkt No: 044158/273011 3/8 KKAFLFLVKEEAKESRDEGKINQAKAKVESKKAEATRLKKIKTDREKAEEE-AKRRADAKLQEA---NVA 270 280 240 230 220 SPB328(23F) Cbp KKAELELVKEEAKESRDEKKINQAKAKVENKKAEATRLKNIKTDREKAEE--AKRRADAKLQEA---NVA 227 SPB365(23F) Cbp KKAELELVKEFAKESRDEKKINQAKAKVENKKAEATRLKNIKTDREKAEE--AKRRADAKLQEA---NVA 227 SPB105(6B) CDDA KKAELELVKEFAKESRODEKIKQAEAKVESKKAEATRLENIKTDREKAEEE-AKRRAEAKLKEAVEKNVA 230 SPSJ12(19A) CDp KKAELELVKVKANEPRDEEKIKQAEAEVESKKAEATRLKKIKTDREKAEEE-AKRRVDAKEQDE-----SPB331(14) CbpA KKAELELVKEEAKESRDEKKINQAKAKVENKKAEATRLKNIKTDREKAEE--AKRRADAKLQEA---NVA 226 SPR332(9V) Cbpa Keaelelvkkeadesrnegtinoakakvesekaeatrlkkiktdrekaeeeeakrradakeode---- 229 ATCC2 Cbpa trun kkaelellkeeak-trnedtinoakakveskkaeatkleeiktdrkkaeee-akrkaeaee-d----kvk 222 R6X(2) CDDA tru KEAELELVKEEAKESRNEGTIKQAKEKVESKKAEATRLENIKTDRKKAEEE-AKRKADAKLKEA---NVA 213 ATCC4 Cbpa trun kkaelelvkvkaneprokokikoaeaeveskoaeatrlkkiktoreeaeee-akrradak------ 260 -SEQDKPKGRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAEAEKKVEEAKKKAEDQK 330 300 310 320 SPB328(23F) Cbp TSEQDKSKRAKREVKGELATPDKKENDAKSSDSSVGEETLTSPSLKPEKKVAEAEKKVEEAKKKAEDQK 297 SPB365(23F) Cbp TSEQDKSKRRAKREVLGELATPDKKENDAKSSDSSVGEETLTSPSLKPEKKVAFAEKKVEEAKKKAEDQK 297 SPB105(6B) CLDA TSEQDKPKGRRKRGVPGEQATPDKKENDAKSSDSSVGEEALPSPSLKPEXKVAEAEKKVAEAEKKAKAQK SPSJ12(19A) Cbp -S-SKRRKSRXKRGDVGEQATPDKKENDAKSSDSSVGEETLPSPSLKPGKKVAEAEKKVEEADKKAKAQK SPB331(14) Cbpa tseqdkskrrakrevfgelatpdkkendakssdssvgeetltspslkpekkvaeaekkveeakkkaedqk SPRJJ2(9V) CDDA ---SKRRKSRGKRGALGEQATPDKKENDAKSSDSSVGEETLPSPSLKPGKKVAEAEKKVEEADKKAKAQK 295 ATCC2 CbpA trun ----DKLKRRTKRAVPGEPATPDKKENDAKSSDSSVGEETLPSPSLKSGKKVAEAEKKVAEAEKKAKDOK 288 R6X(2) CboA tru tsdockpkgrakrgvpgelatpdkkendakssdssvgeetlpssslksgkkvaeaekkveeaekkakdok 283 SPSJ9(14) CbpA -S--KRRKSRVKRGDFGEPATPDKKENDAKSSDSSVGEETLPSPSLKPGKKVAEAEKKVEEAEKKAKDQK 293
ATCC6B Cbpa tru ----DEPKKRTKRGVLGEPATPDKGENDAKSSDSSVGEETLPSPSLKPEKKVAEAEKKVEEAKKKAEDQK 300
Ntype4 CbpA tru ---EQGKPKGRAKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAEAEKKVEEAKKKAEDQK 328 ATCC4 CbpA crun --EQGKPKGRPKRGVPGELATPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAEAEKKVEEAKKKAEDQK 327 EEDRRNYPINTYKTLELEIAESDVEVKKAELELVKEEAKESRNEEKVKQAKAEVESKKAFATRLEKIKTD 350 370 380 420 SPB328(23F) Cbp. EFDRRNYPTNTYKTLELE LAESDVEVKKAELELVKEEAKESRNEEKLKQVKAKVESKKAEATRLENIKTD 367 SPB365(23F) Cbp EEDRRNYPTYTYKTLELEIAESDVEVKKAELELVKEEAKESRNEEKIKQVKAKVESKKAEATRLENIKTD 367 SPB105(6B) CDpA EEDRRNYPINTYKTLELEIAESDVKVKEAELELVKEEAKESRNEEKVNQAKAKVESKKAEATRLEKIKTD 370 SPSJ12(19A) CDp EEDRRNYPTNTYKTLELEIAESDVEVKKAELELVKEEAKEPRNEEKVKQAKAEVESKKAEATRLEKIKTD 361 SPB331 (14) CDDA EEDRRNYPTNYKTLELEIAESDVEVKKAELEIVKEFAKESRNEEKIKQVKAKVESKKAEATRLENIKTD SPR332 (9V) CDDA EEDRRNYPTNYKTLELEIAESDVKVKEAELEIVKEFAKESRNEEKIKQAKAKVESKKAEATRLENIKTD ATCC2 CDDA trun EEDRRNYPTNYKTLDLEIAESDVKVKEAELEIVKEFAKGSRNEEKINQAKAEVESKKAEATRLEKIKTD R6X (2) CDDA trun EEDRRNYPTNYKTLDLEIAESDVKVKEAELEIVKEFAKGSRNEEKINQAKAEVESKKAEATRLEKIKTD R6X (2) CDDA tru EEDRRNYPTNYKTLDLEIAESDVKVKEAELEIVKEFAKEPRDEEKIKQAKAKVESKKAEATRLENIKTD 366 365 358 SPSJ9(14) Cbpa EEDHRNYPTIT/KTLELEIAESDVEVKKAELELVKEEAKGSRNEEKVKQAKAEVESKKAFATRLEKIKTD ATCC6B Cbpa tru EEDRRNYPTNTYKILELEIAESDVEVKKAELELVKEEAKEPRNEEKVKQAKAEVESKQAEATRLENIKTO Ntype4 CbpA tru EEDRRNYPINTYKTLELEIAESDVEVKKAELELVKEEAKEPRNEEKVKQAKAEVESKKAEATRLEKIKTD 398 ATCC4 CbpA trun EEDRRNYPTNTYKTLELEIAESDVEVKKAELELVKEEAKEPRNEEKVKQAKAEVESKKAEATRLEKIKTD 397 RKKABEE-AKRKAAEEDKVKEKPAEQPQPAPAPQPEKPAEEPENPAPAP-PKPENPAEQPKAEKPADQQA 450 470 460 440 SPB365(23F) Cbp RKKAEEEEAKRRAAEEDKVKEKPADQYPAPAPQPEKPTEEPENPAPAPAPAPEKPKAEKPADQQA 437
SPB105(6B) Cbp RKKAEEE-AKRKAAEEDKVKEKPADQYPAPAPQPEKPTEEPENPAPAP--KPEKPADQPKAEKTDDQA 437
SPSJ12(19A) Cbp RKKAEEE-AKRKAAEEDKVKEKPADQPKPAPAPQPEKPA------P--KPENPAEQPKAEKPADQQA 419 SPB331(14) Cbpa rkkaeeeeakrraaeetikvkekpaeopopapapopekpteepenpapapapkpenpaekpkaekpadooa 436 SPR332(9V) CDDA RKKAEFE-AKRKAAEFIKVKEKPAEQPQPAPAPQPEKPAEEPENPVPAP--KPENPAEQPKAEKPADQQA 432 ATCC2 Cbpa crun rkkaeee-akrkaaeedkvkekpaeqpqpapapqpekpteepenpapa--pkpekpaeqpkaektddqqa 425 R6X(2) Cbpa tru rkkaeee-akrkaaeedkvkekpaeopopapatopekp-------a--pkpekpaeopkaektddooa 411 SPSJ9(14) Cbpa rkkaeee-akrkaaeedkvkekpaeopopapapopekpap------a--pkpenpaeopkaekpadooa 423 АТСС6В Сыра tru RKKAEEE-AKRKAAEEDKVKEKPAEQPQPAPAPQPEKPAPKPEKPAPA--PKPENPAEQPKAEKPADQQA 437 458 EE---439 SPB328 (23F) Clop EE 437 439 SPB365 (23F) Cbp SPB105(6B) ClopA EE 419 SPSJ12(19A) Chp 437 SPB331(14) ClopA E SPR332(9V) ClopA E 433 ATCC2 ChoA trun EE R6X(2) CbpA tru EE SPSJ9(14) CbpA EE 425 439 ATCC6B Cbpa tru EE Ntype4 CbpA tru EE 460 ATCC4 CbpA trun EE 459

Title: A POĽÝPEPTIĎE CÖMPRISIÑG THE AMINO ACID OF AN N-TERMINAL CHOLINE BINDING PROTEIN A TRUNCATE, VACCINE DERIVED THEREFROM AND USES THEREOF

Inventor(s): Tuomanen

Inventor(s): Tuomanen

Application No: To Be Assigned Atty Dkt No: 044158/273011

4/8

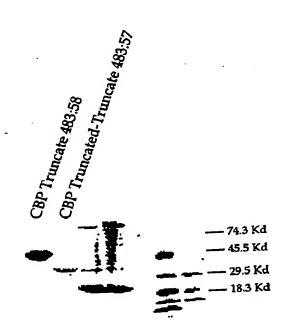


Figure 3

Inventor(s): Tuomanen

Application No: To Be Assigned Atty Dkt No: 044158/273011

5/8

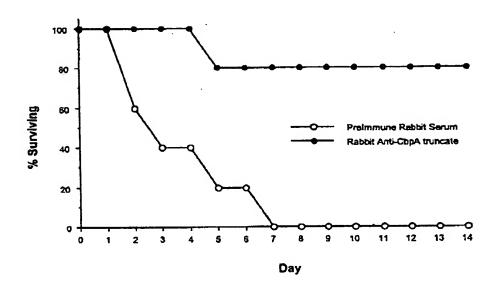


Figure 4

Inventor(s): Tuomanen

Application No: To Be Assigned Atty Dkt No: 044158/273011

6/8

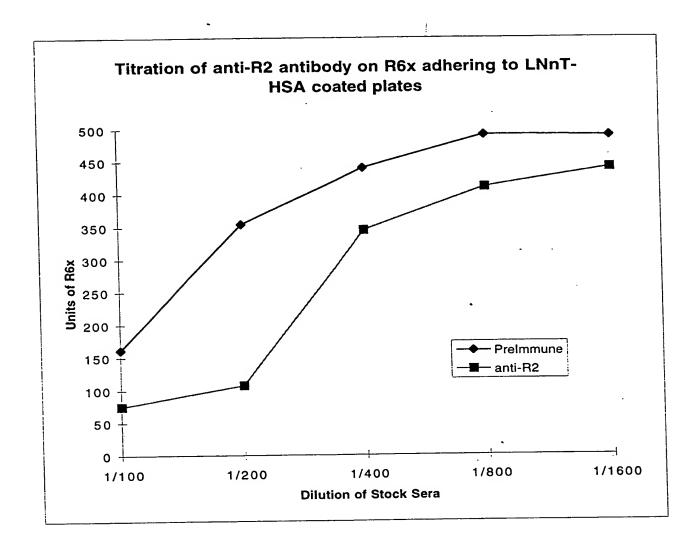


Figure 5

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7/8

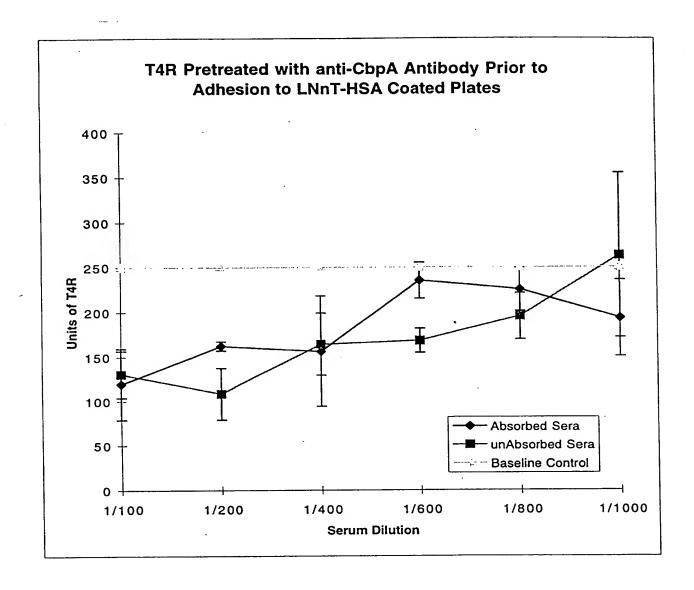


Figure 6

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8/8

## **Active Protection**

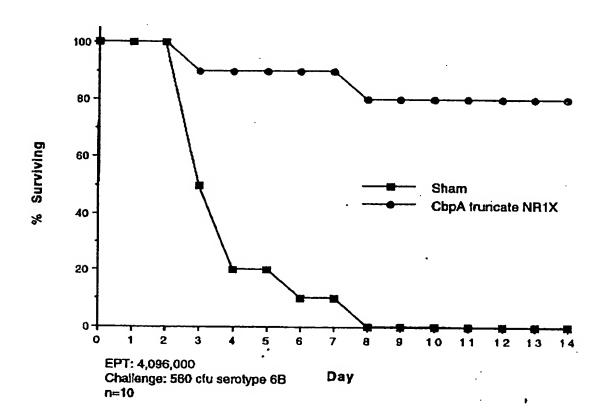


Figure 7

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